



## General

The pneumatic actuated valves are grouped in this part of catalogue because they have similar operating conditions of the solenoid valves. In fact the commutation signal is remote as it is for the manual and mechanical actuated valves.

In the first part of these catalogues are listed the pneumatic actuated valves for single use not suitable to be assembled on bases but eventually on manifold with one inlet port only.

The valves series 800 are suitable for both single and ganged applications. These valves have a diversified use of 3-ways and 5-ways based on balanced spool as shown on functional symbols. The repositions are made by spring, differential pneumatic spring or pneumatic for the bistable and centre spring return.

## Construction characteristics

	Body	Actuators	Bottom plates	Pistons	Spacers	Seals	Spools	Springs
<b>Series 104</b>	Technopolymer		/	Aluminium	Technopolymer	NBR	Steel	Stainless steel
<b>Series 105</b>	Aluminium		/					Spring steel
<b>Series 805</b>	Aluminium				/	HNBR	Aluminium	Stainless steel
<b>Series 808</b>								Spring steel
<b>Series 228</b>	Aluminium	Aluminium Technopolymer	Technopolymer			NBR	Steel	Spring steel
<b>Series T228</b> (Ver. 3/2-5/2)	Technopolymer					NBR	Technopolymer	Spring steel
<b>Series T228</b> (Ver.5/3)							Steel	
<b>Series 488</b>	Aluminium	Technopolymer				NBR	Steel	Stainless steel
<b>Series T488</b> (Ver. 3/2- 5/2)	Technopolymer					NBR	Technopolymer	
<b>Series T488</b> (Ver. 5/3)							Steel	
<b>Series 224</b>	Aluminium	Technopolymer	Aluminium	Technopolymer	NBR	Steel	Spring steel	
<b>Series T224</b> (Ver. 3/2-5/2)	Technopolymer					NBR	Technopolymer	Spring steel
<b>Series T224</b> (Ver. 5/3)							Steel	Stainless steel
<b>Series 212</b>	Aluminium			Technopolymer	NBR	Steel	Spring steel	
<b>Series 212/2</b>				/	PUR	Aluminium		
<b>Series 211</b>	Aluminium				NBR	Steel		

## Use and maintenance

These valves have an average life of 15 million cycles depending on the application and air quality, filtered and lubricated air using specified lubricants will dramatically reduce the wear of the seals and ensures long and trouble free operation.


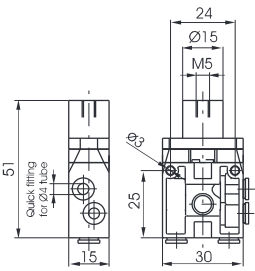

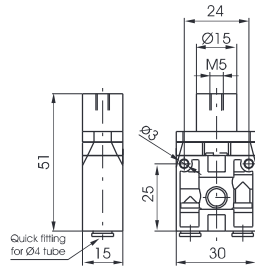
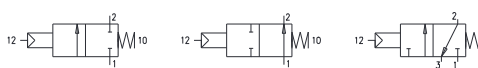
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature and that exhaust ports 3 & 5 are protected against the possible ingress of dirt or debris.

Repair kits including the spool complete with seals are available for overhauling the valves; however, although this is a simple operation it should be carried out by a competent person.


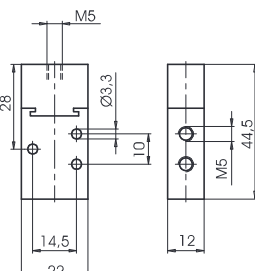

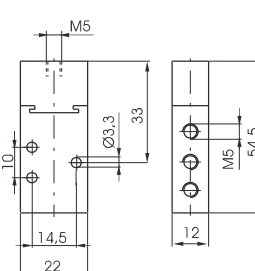

**ATTENTION:** use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).




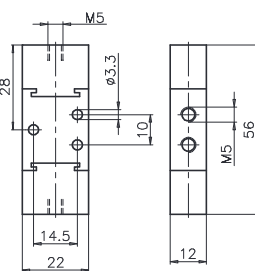

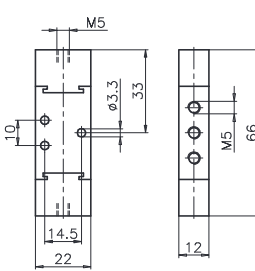

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<b>Pneumatic - Spring</b>	2/2 3/2	<b>Ordering code</b>	2/2 3/2	<b>Pneumatic - Spring</b>
<i>Lateral connections</i>		<b>104.1.11.1.C.F</b>		<i>Rear connections</i>
		TYPE 22 = 2 ways 32 = 3 ways CONNECTION TYPE L = Lateral P = Rear FUNCTION A = Normally Open C = Normally Closed		
Weight gr. 25 Minimum piloting pressure 2,5 bar				Weight gr. 25 Minimum piloting pressure 2,5 bar

Operational characteristic							
Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size	Pilot ports size
Filtered air, with or without lubrication	10 bar	Min.	Max.	90 NI/min	mm 2,5	ø4 tube	M5

<b>Pneumatic - Spring</b>	3/2	<b>Ordering code</b>	5/2	<b>Pneumatic - Spring</b>
		<b>105.1.11.1</b>		
		TYPE 32 = 3 ways 52 = 5 ways		
Weight gr. 90 Minimum piloting pressure 2,5 bar				Weight gr. 100 Minimum piloting pressure 2,5 bar

Operational characteristic							
Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size	Pilot ports size
Filtered and lubricated air	10 bar	-5	+70	120 NI/min	mm 2,5	M5	M5

<b>Pneumatic - Differential external</b>	3/2	<b>Ordering code</b>	5/2	<b>Pneumatic - Differential external</b>
		<b>105.1.11.12</b>		
		TYPE 32 = 3 ways 52 = 5 ways		
Weight gr. 110 Minimum piloting pressure 2,5 bar				Weight gr. 120 Minimum piloting pressure 2,5 bar

Operational characteristic							
Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size	Pilot ports size
Filtered and lubricated air	10 bar	-5	+70	120 NI/min	mm 2,5	M5	M5



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Pneumatic - Pneumatic

3/2

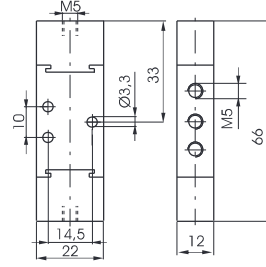
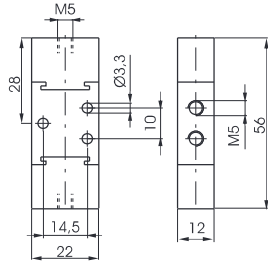
Ordering code

**105.T.11.11**

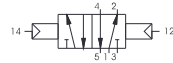
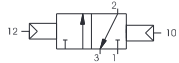
5/2

Pneumatic - Pneumatic

TYPE
32 = 3 ways
52 = 5 ways



Weight gr. 110  
Minimum piloting pressure 2,5 bar



Weight gr. 120  
Minimum piloting pressure 2,5 bar

**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size	Pilot ports size
Filtered and lubricated air	10 bar	-5 - +70	120 NI/min	mm 2,5	M5	M5